REMARKS

The Office Action dated August 23, 2005 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 3, 5, 7 12 and 17 have been amended. No new matter has been added, and no new issues are raised which require further consideration and/or search. Claims 1-21 are submitted for consideration.

Claims 1-21 were rejected under 23 U.S.C. 102(e) as being anticapted by U.S. Patent No. 6,714,517 B1 to Fawaz. The rejection is traversed as being based on a reference that neither teaches nor suggests each of the features clearly recited in independent claims 1, 3, 5, 7 12 and 17.

Claim 1, upon which claim 2 depends, recites a method of prioritizing packet flows within a switch. The method includes the steps of receiving a packet at an input port, stamping the packet with an arrival time and classifying the packet into a flow. The flow is determined based upon at least a class of service of the packet. The method also includes the step of assigning the packet to at least one queuing ring according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers, each list of pointers being assigned to a specified flow and a head pointer in each of the at least one list represents the specified flow. The method further includes maintaining a flow ratio pending within the switch based upon the flow of the packet. A gap between head

pointers of the list of pointer is calculated when one head pointer is added or deleted from the queuing ring.

Claim 3, upon which claim 4 depends, recite a switch for prioritizing and routing a packet through a communication system. The switch includes an input port for receiving the packet from an input source, a time stamp for stamping the packet with an arrival time and a classification module for determining a flow of the packet, wherein the flow is determined based upon at least a class of service of the packet. The switch also includes a queuing module assigning the packet to at least one queuing ring according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers, each list of pointers being assigned to a specific flow, wherein a head pointer in each list represents the specific flow. The switch further includes a flow control module for maintaining a flow ratio pending within the switch based upon the flow of the packet. A gap between head pointers of the list of pointer is calculated when one head pointer is added or deleted from the queuing ring.

Claim 5, upon which claim 6 depends, recites a switch for prioritizing and routing a packet through a communication system. The switch includes receiving means for receiving a packet at an input port, stamping means for stamping the packet with an arrival time and determining means for determining a flow of the packet, wherein the flow is determined based upon at least a class of service of the packet. The switch also includes queuing means for assigning the packet to at least one queuing ring according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers,

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each list of pointers being assigned to a specific flow, wherein a head pointer in each list represents the specific flow. The switch further includes maintaining means for maintaining a flow ratio pending within the switch based upon the flow of the packet. A gap between head pointers of the list of pointer is calculated when one head pointer is added or deleted from the queuing ring.

Claim 7, upon which claims 8-11 depend, recites a switch for prioritizing and routing a packet through a communication system. The switch includes an input port for receiving a packet from an input source and an output port for transmitting the packet to an output destination. The switch also includes a queuing module configured to determine a flow of the packet and assign the packet in at least one queuing ring based upon the flow, wherein the flow is determined based upon at least a class of service of the packet and the queuing ring comprises at least one list of pointers, each list being assigned to one flow, wherein a head pointer in each of the at least one list represents a specific flow. The switch further includes a scheduling module configured to schedule the transmission of the packet from the queue within a selected time interval before the transmission of a next outgoing packet and a flow control module configured to maintain a flow ratio pending within the switch based upon the flow of the packet, and to control a transmission rate of the packet from the output port based upon the flow of the packet. The switch also includes a conflict determination module configured to determine if a conflict exists when the packet is scheduled to be transmitted from the output port, a threshold indicator module configured to provide a threshold status based upon the flow

ratio and a transmission module to transmit the packet from the output port according to the schedule determined by the scheduling module.

Claim 12, upon which claims 13-16 depend, recites a method of prioritizing packet flows. The method includes the steps of receiving a packet into an input port, transmitting the packet from an output port and determining a flow of the packet, wherein the flow is determined based upon at least a class of service of the packet. The method also includes the step of assigning the packet to at least one queuing ring according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers, each list being assigned to one flow, wherein a head pointer in each of the at least one list represents a specific flow. The method further includes the step of scheduling the transmission of the packet from the queue within a selected time interval before the transmission of a next outgoing packet, maintaining a flow ratio pending within the switch based upon the flow of the packet and controlling a transmission rate of the packet from the output port based upon the flow of the packet. The method also includes the step of determining if a conflict exists when the packet is scheduled to be transmitted from the output port, providing a threshold status based upon the flow ratio and transmitting the packet from the output port within the selected time interval.

Claim 17, upon which claims 18-21 depend, recites a switch for prioritizing and routing a packet through a communication system. The switch includes receiving means for receiving a packet into an input port, transmitting means for transmitting the packet from an output port and determining means for determining a flow of the packet, wherein

the flow is determined based upon at least a class of service of the packet. The switch also includes assigning means for assigning the packet in at least one queuing ring according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers, each list being assigned to one flow, wherein a head pointer in each of the at least one list represents a specific flow. The switch further includes scheduling means for scheduling the transmission of the packet from the queue within a selected time interval before the transmission of a next outgoing packet, maintaining means for maintaining a flow ratio pending within the switch, and controlling means for controlling a transmission rate of the packet from the output port based upon the flow of the packet. The switch also includes determining means for determining if a conflict exists when the packet is scheduled to be transmitted from the output ports, providing means for providing a threshold status based upon the flow ratio and transmitting means for transmitting the packet from the output port within the selected time interval.

As will be discussed below, the cited prior art reference of Fawaz et al. fails to disclose or suggest each of the elements of any of the presently pending claims.

Fawaz relates to a method and apparatus for interconnection of packet switches with guaranteed bandwidth. Fawaz describes providing a guaranteed minimum bandwidth between pairs of packet switches by defining service level agreements (SLAs). A scheduler in the node of Fawaz ensures that packets from each SLA are scheduled for transmission at a minimum data rate corresponding to the SLA. Referring to Figure 6 of Fawaz, an SLA is identified for the packet using classification information, and the

packet is placed in a FIFO-type buffer 306-312 that corresponds to the SLA, forming a queue of packets for the SLA. The packets are classified according to the SLA, and are scheduled for transmission by scheduler 316. Referring to Figure 8, one queue, or an aggregate queue, is used for all SLAs. A scheduling method known as SLA early discard is used with a form of statistical multiplexing. Each SLA is assigned an integer weight, M(k). When a packet arrives at QoS node 102 and 106, the packet is accepted into the queue only if the number of packets for the particular SLA in the queue is less than M(k). If the number of packets in the queue for the particular SLA have reached or exceeded M(k), then the packet is discarded.

Applicant submits that Fawaz fails to disclose or suggest all the features of claims 1-21. Each of independent claims 1, 3, 5, 7 12 and 17, in part, recites assigning the packet to at least one **queuing ring** according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers, each list being assigned to one flow, wherein a head pointer in each of the at least one list represents a specific flow. There is no teaching or suggestion in Fawaz of assigning the packet to at least one queuing ring according to the flow of the packet, wherein the queuing ring comprises at least one list of pointers, each list being assigned to one flow, wherein a head pointer in each of the at least one list represents a specific flow as recited in claims 1, 2, 5, 7 12 and 17. As mentioned above, Col. 7, lines 47-58 of Fawaz teaches that once an SLA has been identified for a packet, the packet is place into a FIFO type buffer forming a queue of packets for the SLA. Thereafter the packets are scheduled for transmission and placed in

an appropriate output port. In the present invention, on the other hand, the packets are placed into an appropriate queue on the queuing ring. Thus, as recited in claims 1, 3, 5, 7 12 and 17, and shown in figure 2A of the present invention, the queuing ring includes multiple queues, each of which is associated with a specific flow. Applicant submits that there is simply no teaching or suggestion of such a queuing ring in Fawaz.

While Fawaz discloses a ring-type architecture in figure 1, the ring-type architecture of Fawaz is a ring of processing nodes as is known to those of ordinary skill in the art. Applicant submits that a ring of processing nodes is different from the queuing ring as recited in claims 1, 3, 5, 7, 12 and 17. Thus, the ring of figure 1 of Fawaz cannot be considered to be equivalent to the queuing ring of the present invention.

Furthermore, claims 1 and 3, in part, recite calculating a gap between head pointers of the list of pointer when one head pointer is added or deleted from the queuing ring. There is no teaching or suggestion in Fawaz of calculating a gap between head pointers of the list of pointer when one head pointer is added or deleted from the queuing ring as recited in claims 1 and 3. Therefore, Applicant respectfully asserts that the rejection under 35 U.S.C. §102(e) should be withdrawn because Fawaz simply fails to teach or suggest each feature of claims 1, 3, 5, 7, 12 and 17 and hence, dependent claims 2, 4, 6, 8-11, 13-16 and 18-21 thereon.
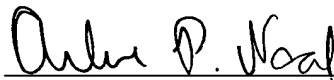
As noted previously, claims 1-21 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore

respectfully requested that all of claims 1-21 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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